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(58) Field of Search

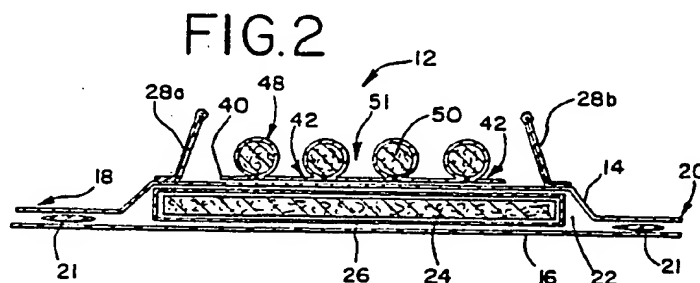
UK CL (Edition N) A4F FQAB FQP, A5R RPC RPL, D1R  
RAA RBF RCA RFQ RGQ  
INT CL<sup>6</sup> A47L, A61F, B65D  
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(54) Liquid absorbent materials e.g. for personal care absorbent articles

(57) A liquid-absorbent material suitable for a liner material 12 for personal care absorbent articles such as diapers contains a plurality of peaks 48 across its surface at spaced-apart intervals separated by channels 51. Disposed within the peaks is a liquid absorbing material 50 capable of absorbing body exudates and liquids in general. The material of the present invention has other uses as, for example, a packing or liner material for packaging and shipping materials containing liquids. In addition, the peaks can contain other additive such as soaps so the material can be used as a wash pad or cloth. The material 50 may be contained in tubular compartments as shown and may be rolled or folded. Alternatively it may be layered within trapezium-shaped compartments. The outer skin 40 is suitably nonwoven. The material 50 is also preferably fibre or fibrous material. Superabsorbent particles may also be used and odour-reducing or anti-microbial agents may be included.



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FIG. 4

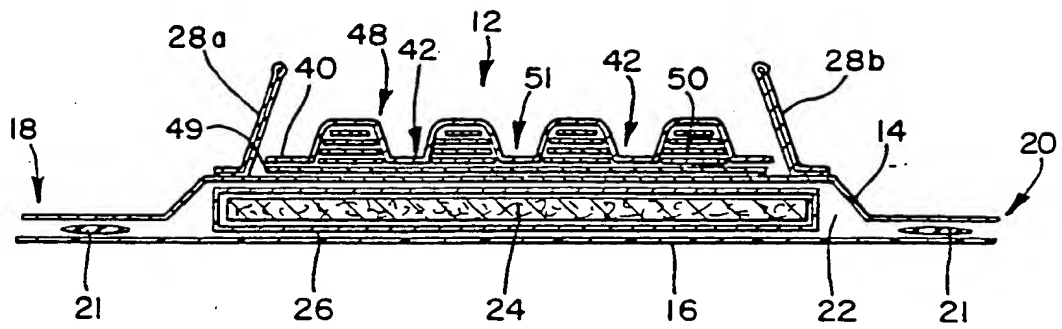


FIG. 5

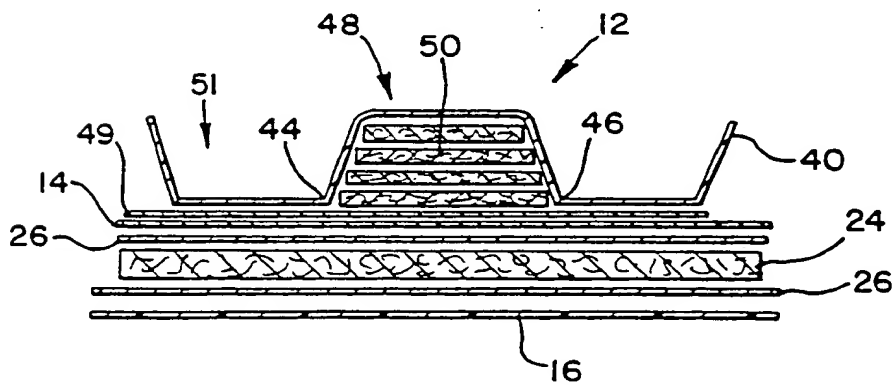


FIG. 6a

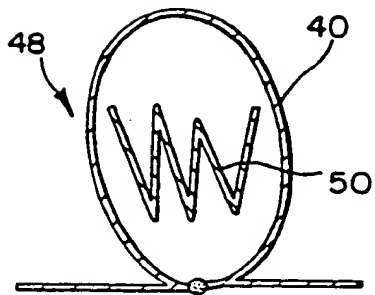


FIG. 6b

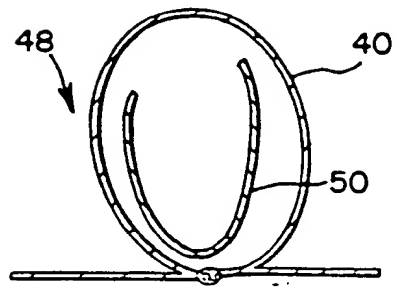


FIG. 6c

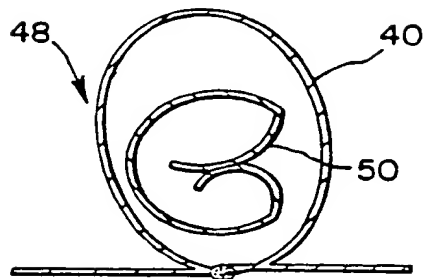


FIG. 6d

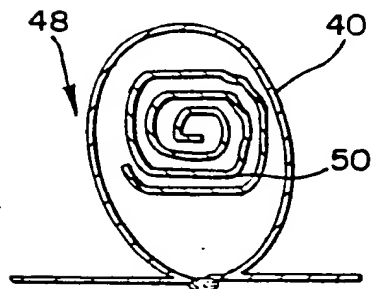


FIG. 6e

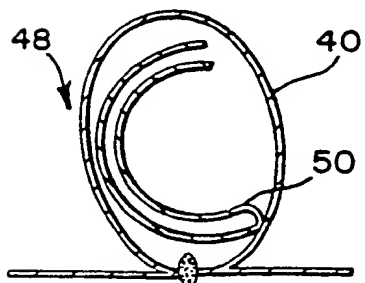


FIG. 7

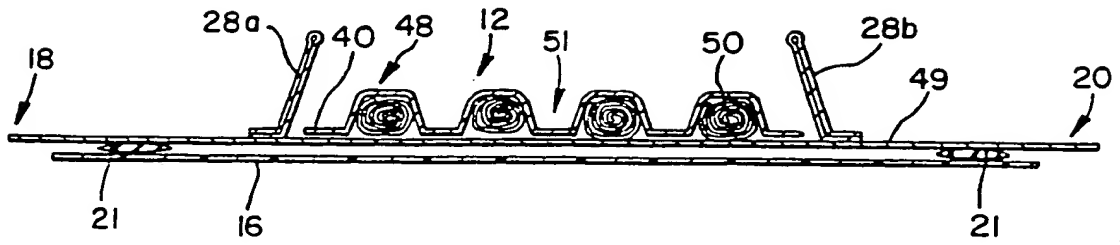


FIG. 8

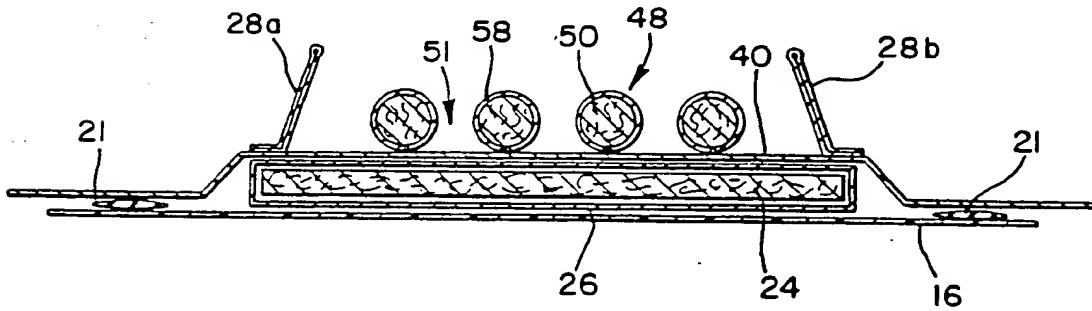
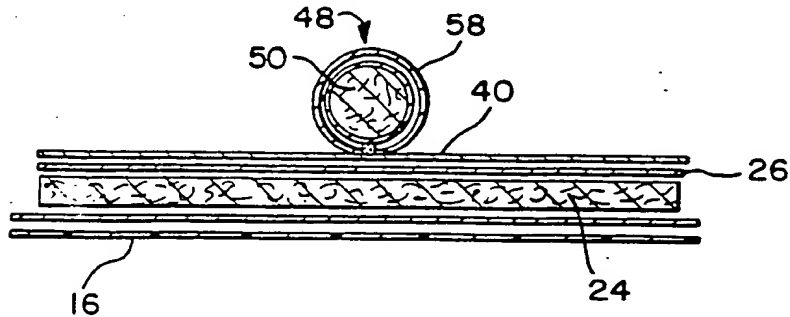
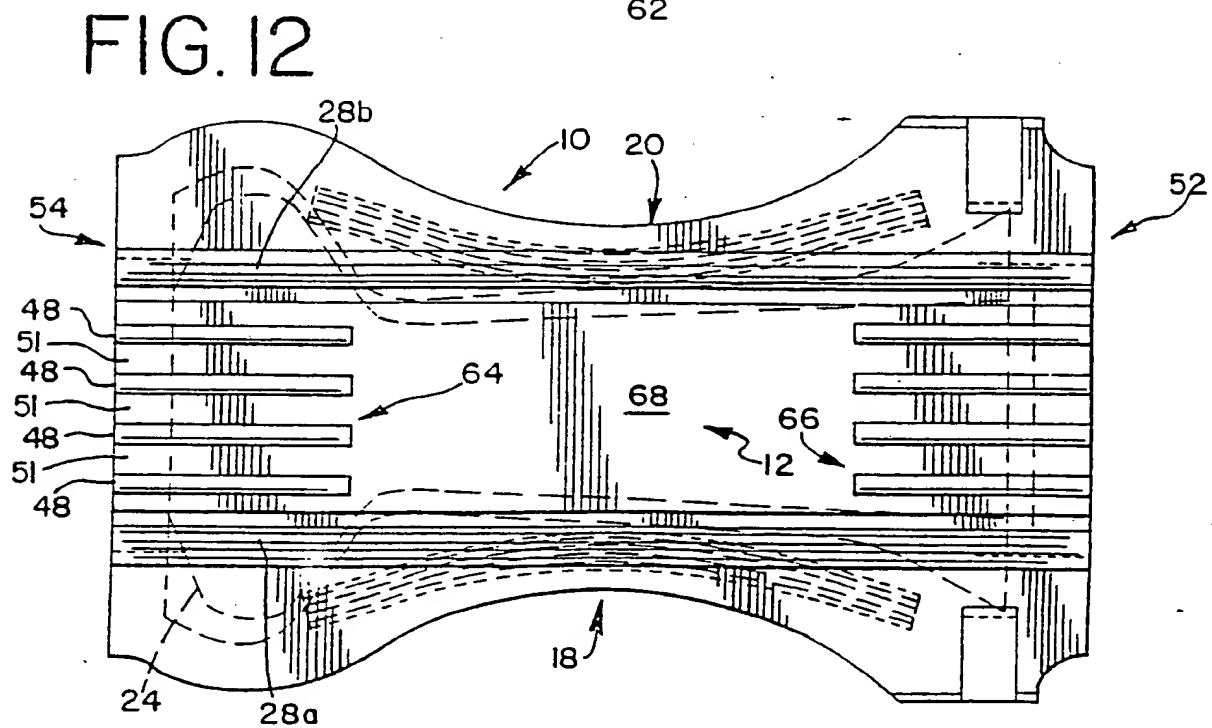
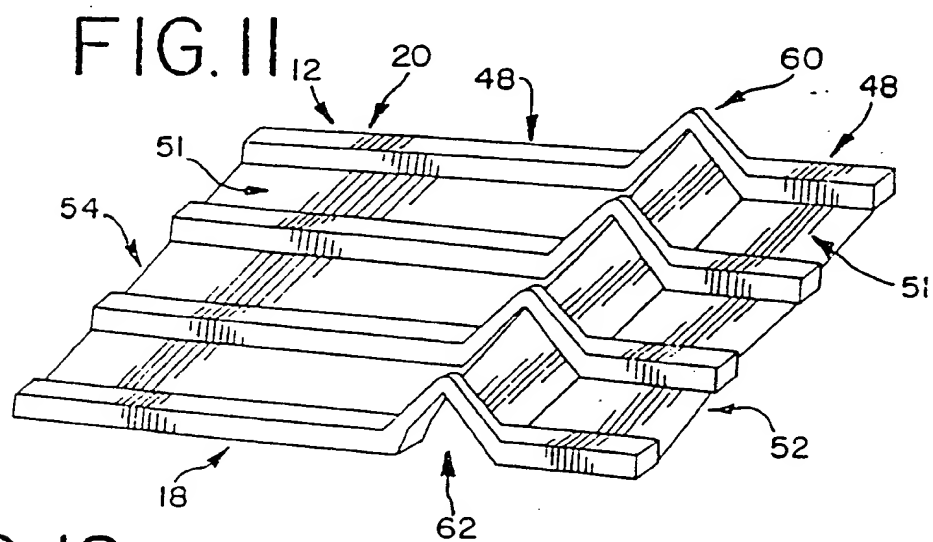
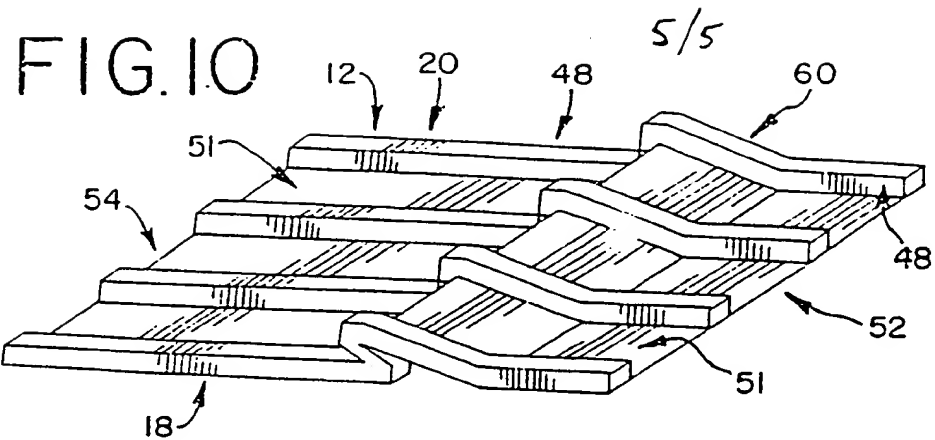


FIG. 9





Claims:

1. A liquid absorbing liner material comprising a plurality of peaks on its surface at spaced-apart intervals separated by channels, and a liquid absorbing material disposed within the peaks for receiving liquids.
2. The liquid absorbing liner material of claim 1, comprising:
  - a facing layer and a support layer, said facing layer being joined to said support layer by a plurality of spaced-apart bonds, said facing layer and support layer between pairs of bonds forming peaks, said peaks being spaced from one another by channels, and
  - a liquid absorbing material disposed within said peaks for receiving liquids.
3. The liquid absorbent liner material of claim 1, comprising:
  - a facing layer containing a plurality of pairs of first and second folds, each of said first and second folds forming respective first and second fold lines, said facing layer being joined to itself generally along said first and second fold lines to form a plurality of spaced-apart peaks, said peaks being spaced from one another by channels, and
  - a liquid absorbing material disposed within said peaks for receiving liquids.
4. A personal care absorbent article comprising:
  - a liner material comprising a plurality of peaks on its surface at spaced-apart intervals separated by channels, and a liquid absorbing material disposed within the peaks for receiving liquid.
5. The personal care absorbent article of claim 4,

comprising:

5       said liner material and a backsheet with an  
absorbent core disposed therebetween, said liner  
material comprising a facing layer and a support layer,  
said facing layer being joined to said support layer by  
a plurality of spaced-apart bonds, said facing layer and  
said support layer between pairs of bonds forming peaks,  
said peaks being spaced from one another by channels,  
and

10       a liquid absorbing material disposed within said  
peaks for receiving body exudates.

6.     The personal care absorbent article of claim 5,  
wherein said liquid absorbing material contacts said  
15     support layer.

7.     The personal care absorbent article of claim 4,  
comprising:

20       said liner material and a backsheet with an  
absorbent core disposed therebetween, said liner  
material comprising a facing layer containing a  
plurality of pairs of first and second folds, each of  
said first and second folds forming respective first and  
second fold lines, said facing layer being joined to  
25     itself generally along said first and second fold lines  
to form a plurality of spaced-apart peaks, said peaks  
being spaced from one another by channels, and

30       a liquid absorbing material disposed within said  
peaks for received body exudates.

8.     The personal care absorbent article of claim 4,  
comprising:

35       said liner material and a backsheet with an  
absorbent core disposed therebetween, said liner  
material comprising a facing layer with a plurality of  
liquid absorbent peaks attached at spaced-apart  
intervals to a surface of said facing layer opposed to



said backsheet and absorbent core.

9. The personal care absorbent article of any one of claims 5 to 8, wherein said liner material is separated from said absorbent core by a separation layer of fibrous nonwoven web material.

10. The personal care absorbent article of claim 9, wherein said separation layer is joined to said backsheet along a left side edge and a right side edge with said absorbent core disposed between said backsheet and said separation layer.

11. The personal care absorbent article of claim 10, wherein said liner material is attached to said separation layer on a side of said separation layer opposed from said absorbent core, said separation layer further including leg dams extending upwardly from a same side of said separation layer as said liner material, said leg dams and said left and right side edges defining zones between said leg dams and said left and right sides respectively which are essentially devoid of said liner material.

12. The personal care absorbent article of claim 4, comprising:  
said liner material and a backsheet joined to said liner material, said liner material comprising a facing layer and a support layer, said facing layer being joined to said support layer by a plurality of spaced-apart bonds, said facing layer and said support layer between pairs of bonds forming peaks, said peaks being spaced from one another by channels, and  
a liquid absorbing material disposed within said peaks for receiving body exudates.

13. The personal care absorbent article of claim 12,

wherein said liquid absorbing material contacts said support layer.

14. The personal care absorbent article of claim 4,  
5 comprising:

said liner material and a backsheet joined to said  
liner material, said liner material comprising a facing  
layer containing a plurality of pairs of first and  
10 second folds, each of said first and second folds  
forming respective first and second fold lines, said  
facing layer being joined to itself generally along said  
first and second fold lines to form a plurality of  
spaced-apart peaks separated by channels, and

15 a liquid absorbing material disposed within said  
peaks for receiving body exudates.

15. The personal care absorbent article of claim 4,  
comprising:

20 said liner material and a backsheet joined to said  
liner material, said liner material comprising a facing  
layer with a plurality of liquid absorbent peaks  
attached at spaced-apart intervals to a surface of said  
facing layer opposed to said backsheet.

25 16. The personal care absorbent article of claim 12,  
13, 14 or 15, wherein said backsheet is breathable and  
said liner material forming said channels is in contact  
with said breathable backsheet.

30 17. The personal care absorbent article of any one of  
claims 5 to 16, wherein said facing layer is made from a  
fibrous nonwoven web.

35 18. The personal care absorbent article of claim 17,  
wherein said fibrous nonwoven web includes bicomponent  
fibers.

19. The personal care absorbent article of any one of claims 5 to 18, wherein said facing layer further defines a plurality of apertures extending through said facing layer.
- 5 20. The personal care absorbent article of any one of claims 5 to 19, wherein said backsheet is breathable.
- 10 21. The personal care absorbent article of any one of claims 4 to 20, wherein at least one of said peaks further contains a superabsorbent material.
- 15 22. The personal care absorbent article of any one of claims 4 to 21, wherein at least one of said peaks further contains an odour reducing agent.
- 20 23. The personal care absorbent article of any one of claims 4 to 22, wherein said liquid absorbing material disposed within said peaks is a fibrous nonwoven web.
- 25 24. The personal care absorbent article of claim 23, wherein said fibrous nonwoven web contained within said peaks has opposing first and second exterior surfaces and a plurality of pores dispersed within said web, said web defining a pore size gradient from said first exterior surface to said second exterior surface, said pores adjacent said first exterior surface being larger than said pores adjacent said second exterior surface.
- 30 25. The personal care absorbent article of claim 24, wherein said fibrous nonwoven web within said peaks is folded over on itself such that said second exterior surface contacts itself.
- 35 26. The personal care absorbent article of any one of claims 23 to 25, wherein said fibrous nonwoven web contained within said peaks is made from a blend

including polyethylene sheath/polyester core bicomponent fibers, rayon fibers and polyester fibers.

27. The personal care article of any one of claims 4 to  
5 26 wherein said article defines a front edge, a back  
edge, a left side edge and a right side edge, said liner  
material further defining a front portion adjacent said  
front edge and a back portion adjacent said back edge,  
said front portion and said back portion being separated  
10 by a central portion, said central portion being devoid  
of said peaks.

28. The personal care absorbent article of any one of  
claims 4 to 27, wherein said article defines a front  
15 edge, a back edge, a left side edge and a right side  
edge, said liner material having a dam extending across  
said liner material in a direction generally parallel to  
at least one of said front edge and said back edge.

29. The personal care absorbent article of claim 28,  
20 wherein said dam is formed by a fold in said liner  
material.

30. The personal care absorbent article of any one of  
25 claims 4 to 29, wherein said article defines a front  
edge and a back edge, a left side edge and a right side  
edge, said peaks having closed ends adjacent said front  
edge and said back edge.

31. A liquid absorbing liner material substantially as  
30 hereinbefore described with reference to any of the  
accompanying drawings.

32. A personal care absorbent article substantially as  
35 hereinbefore described with reference to any of the  
accompanying drawings.

<b>Patents Act 1977</b> <b>Examiner's report to the Comptroller under Section 17</b> <b>(the Search report)</b>	Application number GB 9425480.2
<b>Relevant Technical Fields</b>  (i) UK Cl (Ed.N)      A4F (FQAB, FQP); A5R (RPC, RPL); D1R (RAA, RBF, RCA, RFQ, RGQ)  (ii) Int Cl (Ed.6)      A47L; A61F; B65D  <b>Databases (see below)</b> (i) UK Patent Office collections of GB, EP, WO and US patent specifications.  (ii) ONLINE DATABASES: WPI	Search Examiner MR A LITTLEJOHN  Date of completion of Search 21 FEBRUARY 1995  Documents considered relevant following a search in respect of Claims :- 1-32

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